

696-250

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT OPERATION**

In re Application of:

Brewer et al.

Serial No.: 09/493,350

Group Art Unit: 1764

Filed: January 28, 2000

Examiner: H. Tran

For: MULTI-ZONE CRACKING FURNACE

New York, New York 10036
April 7, 2003

VIA FACSIMILE

Assistant Commissioner for Patents
Washington D.C. 20231
Attention: Examiner Tran – Art Unit 1764

DRAFT CLAIMS FOR DISCUSSION PURPOSES ONLY

Dear Examiner Tran –

Please consider the following draft amended claims for purposes of conducting an Examiner Interview with regard to the above-identified matter.

1. (Twice Amended) A furnace for cracking at least two separate and independent hydrocarbon feed feeds to produce olefins, said furnace comprising:

- (a) at least one fired radiant chamber, wherein said radiant chamber is divided into at least two separate independent radiant zones by a fired radiant chamber dividing means,

696-250

- (b) at least one radiant burner in each said separate independent radiant zone of said fired radiant chamber;
- (c) a convection chamber in direct communication with each said fired radiant chamber;
- (d) ~~at least one~~ a separate and independent process coil for each said separate independent radiant zone for cracking each said separate and independent feedstock, wherein each said separate and independent process coil extends through at least a portion of said convection chamber and extends into one of said separate and independent radiant zones for separately and independently cracking said separate and independent feedstock to olefins before exiting said furnace;
- (e) a flue for discharging flue gas located at the top of said convection chamber of said furnace; and
- (f) a means for independently controlling the radiant burner in each said separate independent radiant zone.

2. (Amended) A furnace for cracking at least four separate and independent hydrocarbon feeds ~~hydrocarbon feed~~ to produce olefins, said furnace comprising:

- (a) at least two fired radiant chambers, wherein each said radiant chamber is divided into at least two separate independent radiant zones by a fired radiant chamber dividing means;
- (b) at least one radiant burner in each of said separate and independent radiant zones of said fired radiant chambers;

696-250

- (c) a convection chamber in direct communication with each said fired radiant chamber;
- (d) ~~at least one~~ a separate and independent process coil for each said separate independent radiant zone, wherein each said process coil extends through at least a portion of said convection chamber and extends into one of said separate and independent radiant zones for separately and independently cracking said separate and independent feedstock to olefins before exiting said furnace;
- (e) a flue for discharging flue gas located at the top of each said convection chamber of said furnace; and
- (f) a means for independently controlling the radiant burner in each said separate independent radiant zone.

9. (Amended) An improved pyrolysis cracking furnace having a radiant cracking chamber wherein said improvement comprises dividing said radiant cracking chamber into at least two separate and independent radiant cracking zones by providing a dividing wall in said radiant cracking chamber to separate said radiant cracking chamber into at least two separate and independent radiant cracking ~~zone~~ zones, providing a separate and independent process coil for directing a separate and independent hydrocarbon feedstock through each said separate and independent radiant cracking zone, and separately and independently controlling the temperature in each of said separate and independent radiant cracking zones to crack each said separate and independent hydrocarbon feedstock to olefins.